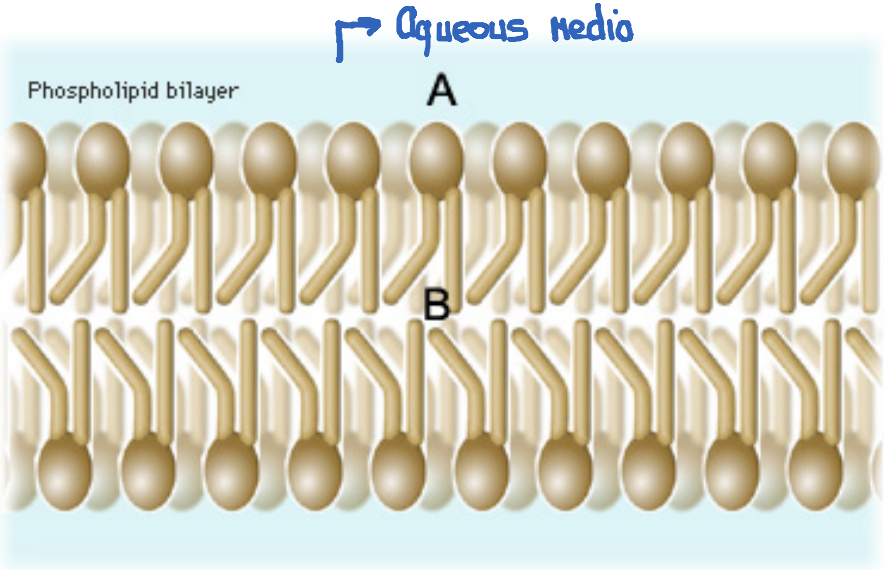
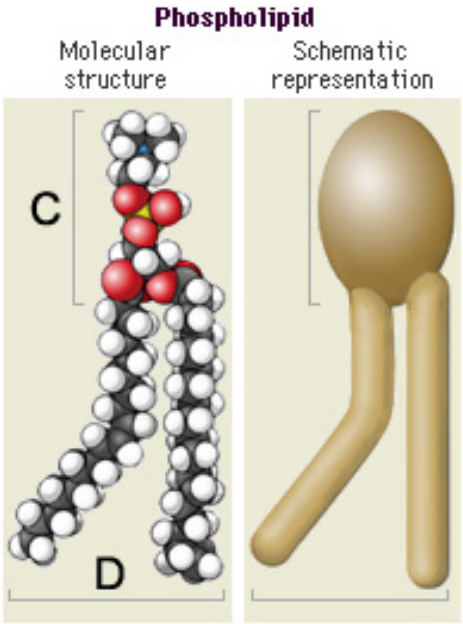
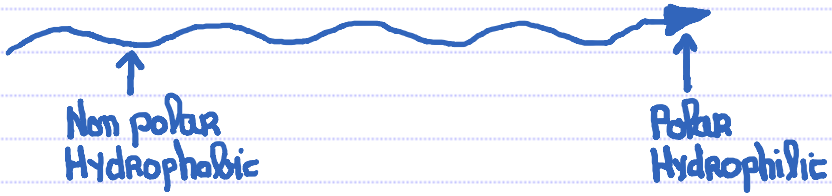
3.11 Consequence of Molecular Polarity







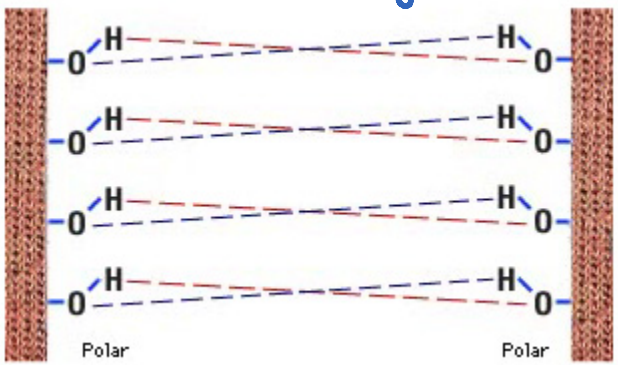
3.11 Consequence of Molecular Polarity

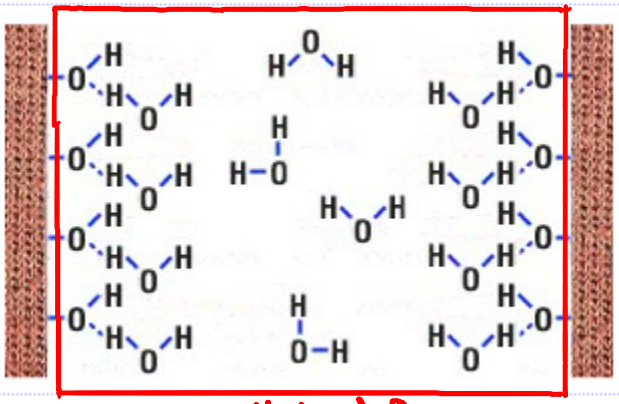
Detergents

? Think outside the box ... is there any way that the reverse process might find some medical use?

3.11 Consequence of Molecular Polarity

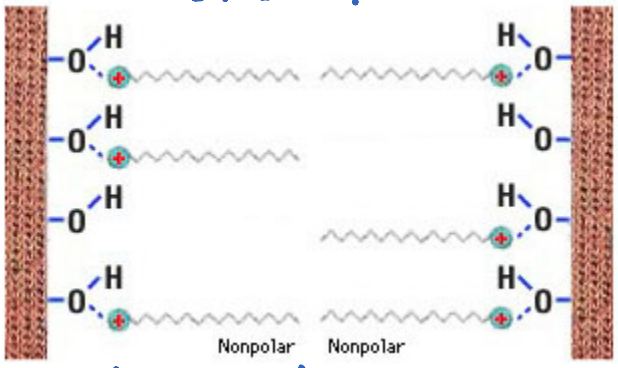
Static cling!



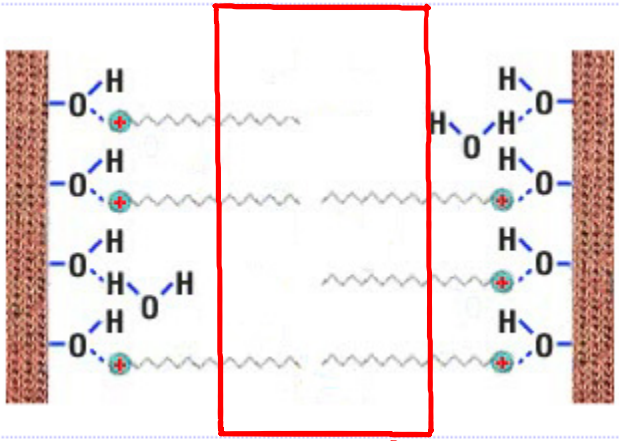


Hydrophilic

'Oh so soft'

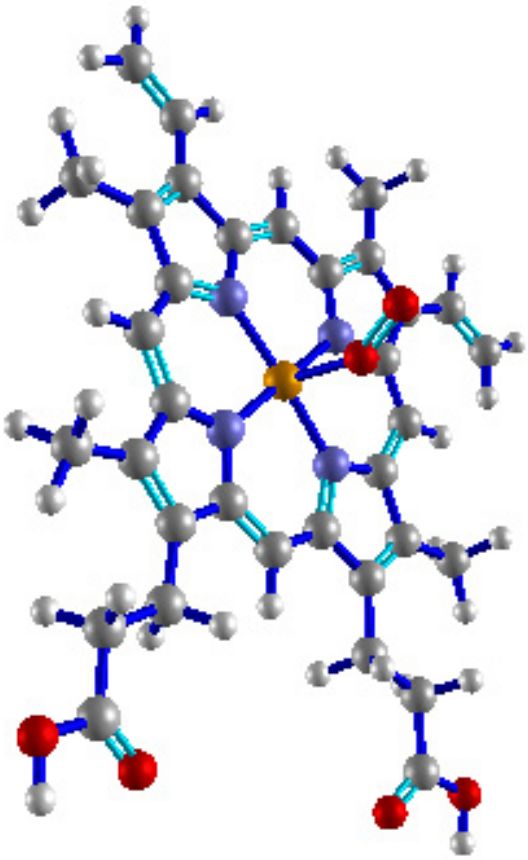


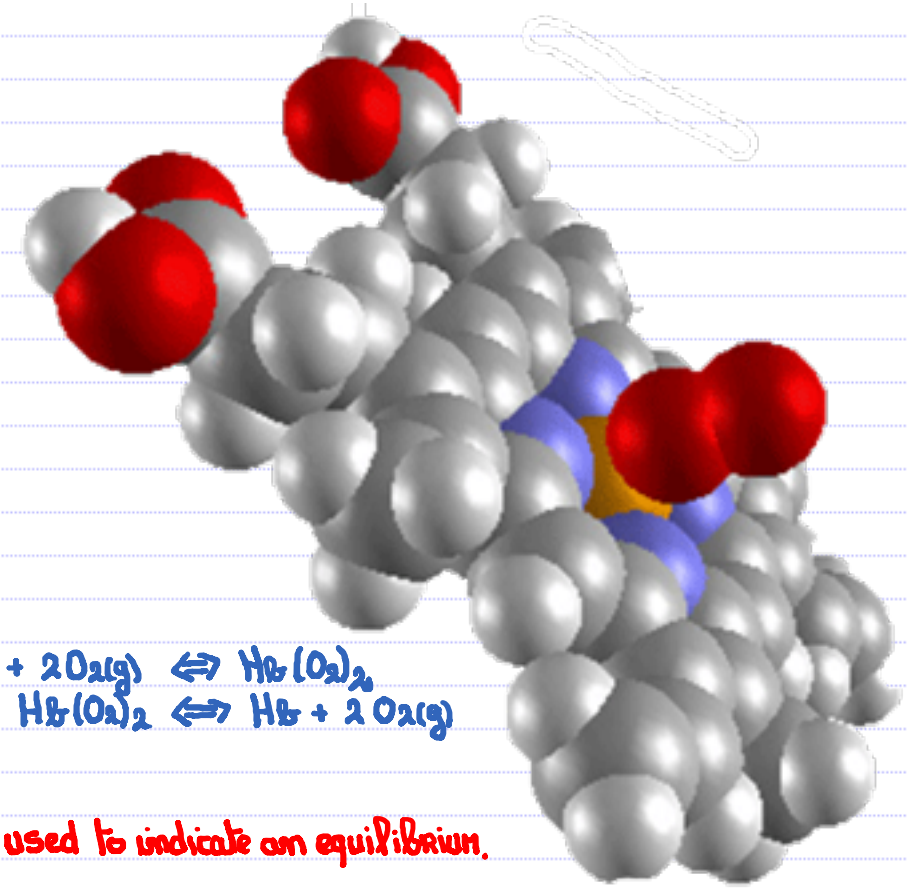
Fabric softner



Hydropholic.

7.5 What Does It Mean to Say That a Reaction Has Reached Equilibrium



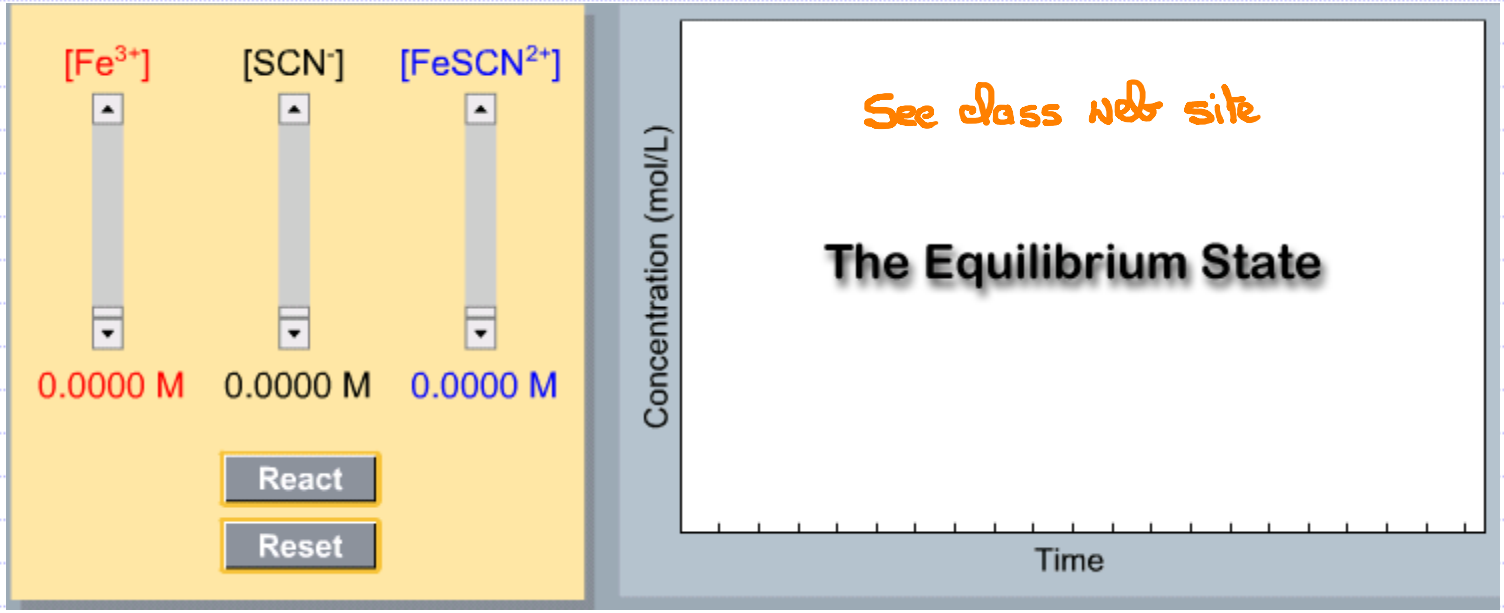


$Hb + 2O_{2(g)} \rightleftharpoons Hb(O_2)_2$

$Hb(O_2)_2 \rightleftharpoons Hb + 2O_{2(g)}$

'$\rightleftharpoons$' used to indicate an equilibrium.

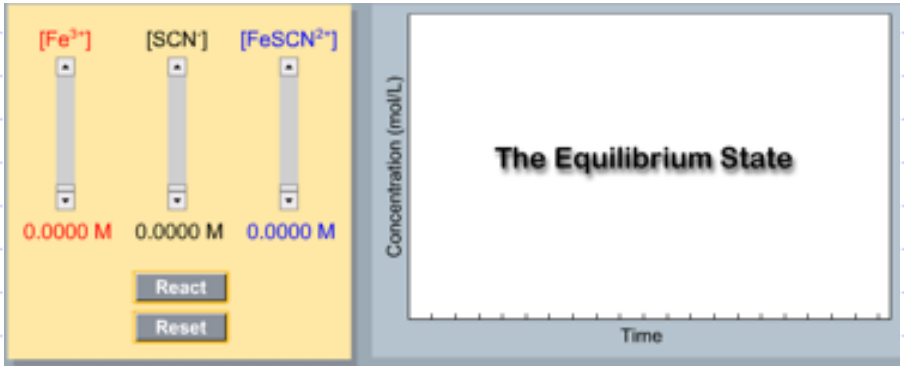
7.5 What Does It Mean to Say That a Reaction Has Reached Equilibrium



$$Fe^{3+} + SCN^- \Leftrightarrow FeSCN^{2+}$$

$$FeSCN^{2+} \Leftrightarrow Fe^{3+} + SCN^-$$

7.5 What Does It Mean to Say That a Reaction Has Reached Equilibrium



Starting Concentrations			
	$[Fe^{3+}]$	$[SCN^-]$	$[FeSCN^{2+}]$
#1	0.004	0.007	0
#2	0	0	0.007
#3	0.004	0.003	0.004

Equilibrium Concentrations					
	$[Fe^{3+}]$	$[SCN^-]$	$[FeSCN^{2+}]$	$[Fe^{3+}][SCN^-]/[FeSCN^{2+}]$	$[FeSCN^{2+}]/[Fe^{3+}][SCN^-]$
#1	2.285×10^{-3}	5.285×10^{-3}	1.714×10^{-3}	7.046×10^{-3}	141.9
#2	4.333×10^{-3}	4.333×10^{-3}	2.666×10^{-3}	7.042×10^{-3}	142.0
#3	5.069×10^{-3}	4.069×10^{-3}	2.930×10^{-3}	7.040×10^{-3}	142.0

$$\frac{[Fe^{3+}][SCN^-]}{[FeSCN^{2+}]} = \text{Constant} \qquad \frac{[FeSCN^{2+}]}{[Fe^{3+}][SCN^-]} = \text{Constant}$$